Manitoba

Conservation Environmental Programs

Environmental Livestock Program
Box 46, 200 Saulteaux Crescent
Winnipeg MB R3J 3W3

February 1, 2006

To Stakeholders and Interested Persons:

Re: Amending the *Livestock Manure and Mortalities Management Regulation*:
Recommendations for Regulating Phosphorus from Livestock Operations in Manitoba

Amendments to the *Livestock Manure and Mortalities Management Regulation* in 2004 included the requirement for the Minister of Conservation to review the effectiveness of regulating manure application to land on the basis of nitrate nitrogen in the soil after reviewing any recommendations of the Phosphorus Expert Committee. The concern was that long term regulation of manure application on the basis of nitrate nitrogen could result in over-application of manure phosphorus and a build-up of soil phosphorus. This has implications for the eutrophication of waterways and waterbodies, especially Lake Winnipeg.

The Manitoba Phosphorus Expert Committee was established in September, 2002 and tasked with developing recommendations for regulating manure application on the basis of phosphorus. The Committee reviewed current scientific literature, consulted with Canadian and international experts, hosted a workshop with internationally recognized speakers, and sought advice from neighbouring jurisdictions. The Committee carefully considered all the information, debated at length and ultimately reached a consensus on recommendations they thought appropriate for the Minister of Conservation to consider. These recommendations were shared with key stakeholders in April and May, 2005.

Responses to the recommendations ranged from concern about proposed limits and challenges for implementation to suggestions for improvement. Significantly, there was virtually unanimous support for the underlying concepts proposed.

A draft of proposed regulatory amendments has been developed from the recommendations prepared by the Manitoba Phosphorus Expert Committee. The proposed amendments reflect many of the concerns expressed by key stakeholders. They are also consistent with the proposed nutrient regulations for Water Quality Management Zones.

A consultation worksheet regarding the proposed regulatory amendments is attached for your use should you wish to provide detailed comments. You are encouraged to review the proposed amendments and to submit written comments to:

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Please note that there will also be a formal public consultation process. Manitoba Conservation's consultations on proposed amendment of the *Livestock Manure and Mortalities Management Regulation* will be integrated with Water Stewardship's public workshops to discuss issues and options related to the recently proposed nutrient regulation for Water Quality Management Zones. The dates and locations of these workshops will be announced shortly.

Yours truly,

Al Beck, Manager
Environmental Livestock Program

Attachment

Proposed Amendments to the Livestock Manure and Mortalities Management Regulation:
Based on Recommendations of the Manitoba Phosphorus Expert Committee

Recommended Concepts for General Application across the Province	Draft Regulatory Amendment	Rationale	Your Comment
Use soil test phosphorus levels as thresholds to stimulate management responses	1. No person shall apply livestock manure to land in a manner or at a rate of application except	Establishes the concept of phosphorus thresholds to stimulate a management response.	
No phosphorus based restrictions where soil test phosphorus is <60 ppm Olsen P	*None required*	Nitrate nitrogen limits still apply.	
Where soil test phosphorus levels range from 60 to 119 ppm Olsen P, manure P_2O_5 application is limited to two times the crop removal rate of P_2O_5	a. where soil test phosphorus levels range from 60 to 119 ppm Olsen within the top 0.15 m (6 inches) of soil at any place in the application area, manure P_2O_5 application shall not exceed two times the crop removal rate of P_2O_5.	Agronomic benefit of phosphorus applications other than starter have not been demonstrated beyond 60 ppm Olsen. This clause will control the rate of phosphorus accumulation from manure.	
Where soil test phosphorus levels range from 120 to 179 ppm Olsen P, manure P_2O_5 application is limited to the crop removal rate of P_2O_5	b. where soil test phosphorus levels range from 120 to 179 ppm Olsen within the top 0.15 m (6 inches) of soil at any place in the application area, manure P_2O_5 application shall not exceed the crop removal rate of P_2O_5.	This clause is intended to prevent further build-up of phosphorus levels from manure in soil.	
Manure application is prohibited* where soil test phosphorus levels are 180 ppm Olsen P or greater	1.1 No person shall, without the director's approval, apply livestock manure to land where soil test phosphorus levels are 180 ppm Olsen or greater within the top 0.15 m (6 inches) of soil at any place in the application area.	This clause is intended to provide a cap on soil accumulation of phosphorus from manure.	
*Director's approval required to apply manure where soil test phosphorus levels are 180 ppm Olsen P or greater	a. The director i. may approve manure application where soil test phosphorus levels are 180 ppm Olsen or greater within the top 0.15 m (6 inches) of soil at any place in the application area if the director considers the application appropriate; or	This clause is intended to address unforeseen emergency situations and occasions where further manure application will not place additional risk on the aquatic environment.	
	ii may refuse to approve it.	Director is not obligated to approve the request.	

106-03272/

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106-03272/

Recommended Concepts for General Application across the Province	Draft Regulatory Amendment	Rationale	Your Comment
Multi-year application of manure phosphorus (P_2O_5) allowed	1.2 Notwithstanding subsections 1a and 1b, a person may apply manure P_2O_5 to land at a rate up to five times the annual crop removal rate, providing that	This clause is intended to allow multi-year rates of manure application where current technology precludes very low rates of spreading that might otherwise be required by subsections 1a and 1b.	
Term of multi-year application must not exceed 5 years	*Captured above*		
Further application of manure phosphorus prohibited until expiration of term of multi-year application	a. in the case of subsections 1a and 1b, the number of years equivalent to the multiple of the rate of application have lapsed since manure was applied to that land; or	This clause is intended to ensure that manure is not applied until expiration of the term of multi-year application so as to effectively control phosphorus accumulation.	
	b. in the case of subsection 1b, soil test results indicate that phosphorus levels within the top 0.15 m (6 inches) of soil at any place in the application area do not exceed values that occurred prior to the manure application.	This clause is intended to allow further manure application if the rate of phosphorus removal exceeds published crop removal information.	
	1.3 Until November 10, 2008 Section 1 does not apply to an operator of or a person employed in an agricultural operation on the day Section 1 comes into force unless	The intent of this and the following subsections is to provide adequate lead time for existing operations to come into compliance.	
	a. the operation is expanded after that day; or	Expansions must be capable of managing phosphorus to ensure accumulation is not aggravated.	
	b. the director	The director must be able to address situations where environmental harm ensues.	
	i. believes that the land application of livestock manure in the agricultural operation would likely cause pollution of surface water, groundwater or soil, and	As above.	

Recommended Concepts for General Application across the Province	Draft Regulatory Amendment	Rationale	Your Comment
Continued from above	ii. notifies the operator in writing that Section 1 applies to the agricultural operation for the period specified in the notice.	Clear direction must be provided to the operator.	
	1.4 Despite subsection (1.3), the operator of or a person employed in an agricultural operation on the day Section 1 comes into force may submit a plan, not later than November 10, 2008, that	The intent is to establish a definite deadline that helps ensure operators are taking concrete actions to move forward and are actively planning to come into compliance.	
	a. describes actions taken and plans proposed that will enable the operation to make progressive improvements so as to come into compliance not later than November 10, 2013; and	As above	
	b. is acceptable to the director.	As above	

Recommended Concepts for Special Management Areas: Regularly inundated lands - Red River Valley and Floodplains	Draft Regulatory Amendment	Rationale	Your Comment
Immediate prohibition on winter application of manure (defined in the regulation as extending from November 10 to April 10)	2. Existing agricultural operations with less than 300 animal units that are located in the Red River Valley Special Management Area or in other regularly inundated areas shall be prohibited from winter application of manure after November 10, 2013.	This amendment is intended to provide some lead time for affected operations to come into compliance and for supportive strategies to be developed and implemented by government. Also, the need is recognized for lead time consistent with previous regulation of operations between 300 and 400 AU that are allowed to winter spread until 2010.	
Incorporation within 48 hours or injection of manure applied to tilled fields in fall	2.1 No person shall apply manure after September 10 of any year to land located in the Red River Valley Special Management Area or in other regularly inundated areas unless	Fall application of manure typically occurs after this date, i.e. after harvest has been completed.	
	i. the manure is incorporated within 48 hours of application, or	Incorporated manure is less likely to contaminate overlying flood waters.	
	ii. the manure is injected into the soil.	Injected manure is less likely to contaminate overlying flood waters.	
Manure applied to perennial forages or no-till systems during the fall is not required to be incorporated or injected	2.2 Subsection 2.1 does not apply where manure is applied to perennial forages or to no-till cropping systems.	Vegetated cover minimizes soil erosion while forages and stubble reduce escape of surface applied manure.	

Recommended Concepts for Special Management Areas: Lands Immediately Adjacent to Surface Water or Watercourses	Draft Regulatory Amendment	Rationale	Your Comment
Mandatory permanently vegetated buffer strips where manure application is prohibited	No person shall apply manure to land adjacent to surface water or to a watercourse except as provided for in Schedule A.	Permanently vegetated buffer strips that are well maintained can reduce field loss of dissolved and particulate forms of phosphorus. However, establishment of these strips may pose challenges for some producers (e.g. sources of insect pests and weeds). The intent can also be achieved by setting back manure application in this critical area.	
Permanently vegetated buffer strip of 15 metres adjacent to lakes	*See Schedule A*	As above.	
Permanently vegetated buffer strip of 3 metres for rivers, creeks and large unbermed drains (3rd order or greater)	*See Schedule A*	As above.	
Permanently vegetated buffer strip of 1 metre for other watercourses and roadside ditches	*See Schedule A*	As above.	
Manure application setbacks that vary with method of application	*See Schedule A*	Injected or incorporated manure is less likely to escape the area of application.	
15 metre setback from lakes where manure is applied by injection or low level application followed by incorporation	*See Schedule A*	As above.	
30 metre setback from lakes where manure is applied by high level broadcast or by low level application without incorporation	*See Schedule A*	As above.	
3 metre setback from rivers, creeks and large unbermed drains (3rd order or greater) where manure is applied by injection or low level application followed by incorporation	*See Schedule A*	As above.	

Recommended Concepts for Special Management Areas: Lands Immediately Adjacent to Surface Water or Watercourses	Draft Regulatory Amendment	Rationale	Your Comment
10 metre setback from rivers, creeks and large unbermed drains (3rd order or greater) where manure is applied by high level broadcast or by low level application without incorporation	*See Schedule A*	As above.	
1 metre for manure application adjacent to other watercourses and roadside ditches	*See Schedule A*	As above.	
The Minister of Conservation should review the effectiveness of the new phosphorus-based regulation no later than five years after its coming into force.	3. Not later than March 31, 2011, the minister shall	This review was recommended by members of the Manitoba Phosphorus Expert Committee.	
	a. consider the effectiveness of regulating manure application to soil after consulting with such persons affected by manure application as the minister considers appropriate; and	As above.	
	b. recommend to the Lieutenant Governor in Council that this regulation be amended or continued.	As above.	

Schedule A: Requirements for application of manure to land adjacent to surface water or to a watercourse.
No person shall apply manure to land adjacent to surface water or to a watercourse except in accordance with the following setbacks:

Water Feature	Manure Application Method	Manure Application Setback Width (m) with Permanently Vegetated Buffer Width (m)	Manure Application Setback Width (m) with no Permanently Vegetated Buffer	Your Comment
Lakes (setback measured from the high water mark of the shoreline)	Injection, or low-level broadcast that is followed by immediate incorporation	15 m setback, including 15 m permanently vegetated buffer (total setback 15 m)	20 m setback	
Lakes (setback measured from the high water mark of the shoreline)	High level broadcast or low level application without incorporation	30 m setback, including 15 m permanently vegetated buffer (total setback 30 m)	35 m setback	
Rivers, creeks and large unbermed drains, drainage designation 3rd order or greater (setback measured from the high water mark of the shoreline, or from the edge of the embankment)	Injection, or low-level broadcast that is followed by immediate incorporation	3 m setback, including 3 m permanently vegetated buffer (total setback 3 m)	8 m setback	
Rivers, creeks and large unbermed drains, drainage designation 3rd order or greater (setback measured from the high water mark of the shoreline, or from the edge of the embankment)	High level broadcast or low level application without incorporation	10 m setback, including 3 m permanently vegetated buffer (total setback 10 m)	15 m setback	
First and second order drains, including roadside ditches (setback measured from the high water mark of the shoreline, or edge of the embankment)	Injection, or low-level broadcast that is followed by immediate incorporation	1 m setback, including 1 m permanently vegetated buffer (total setback 1 m)	5 m setback	
First and second order drains, including roadside ditches (setback measured from the high water mark of the shoreline, or edge of the embankment)	High level broadcast or low level application without incorporation	5 m setback, including 1 m permanently vegetated buffer (total setback 5 m)	5 m setback	
Other wetlands (setback measured from the high water mark of the shoreline)	Injection, or low-level broadcast that is followed by immediate incorporation	1 m setback, including 1 m permanently vegetated buffer (total setback 1 m)	5 m setback	
Other wetlands (setback measured from the high water mark of the shoreline)	High level broadcast or low level application without incorporation	5 m setback, including 1 m permanently vegetated buffer (total setback 5 m)	5 m setback	

Definitions

Term	Definition	Your Comment
Olsen	An analytical test to extract elemental phosphorus from soil using the sodium bicarbonate extractant following the methods of analysis outlined in the Recommended Chemical Soil Test Procedures for the North Central Region (North Central Region Research Publication No. 221 Revised January 1998; University of Missouri - Columbia).	
Crop removal rate	The amount of phosphorus, expressed as P_2O_5 equivalent, removed from the field through plant uptake of phosphorus from the soil and export of the plant material from the field through mechanical harvesting or grazing.	
P_2O_5	The amount of phosphorus in commercial fertilizer expressed in the oxide form.	
Regularly inundated area	Area subject to flooding once every 5 years or more frequently.	
Red River Valley	Per map.	
Incorporation	The mixing of commercial fertilizers or manure into soil, usually by tillage, to minimize exposure at the surface and increase contact with the soil.	
Injection	Placement of liquid manure beneath the soil surface using specialized application equipment such as discs, chisels, openers or sweep-type tools.	
High water mark	Point along the shoreline where non-aquatic vegetation is established.	